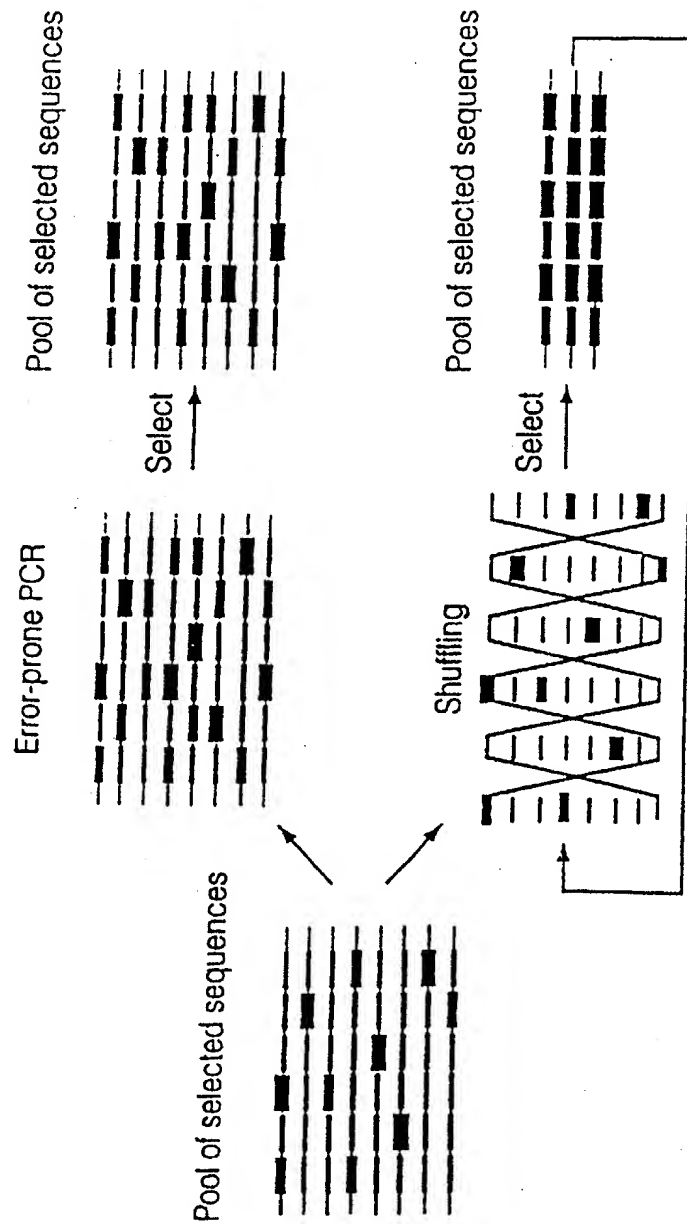


662260" SH947260

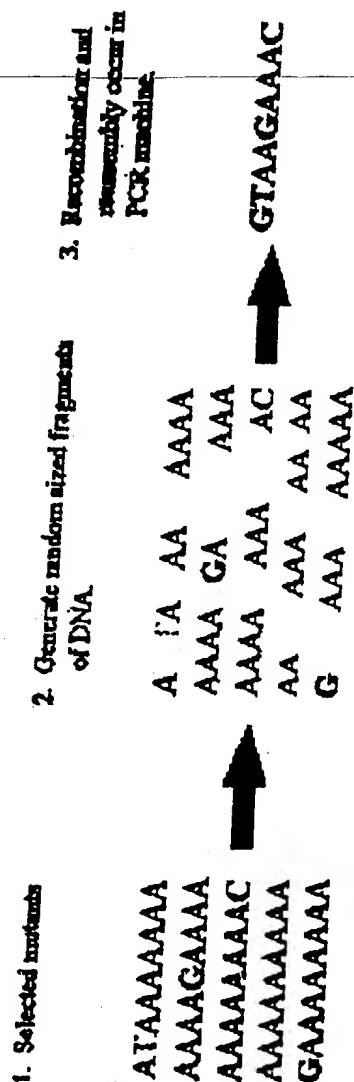
FIG. 1  
Prior Art



662260" SH94T250

FIG. 2

# Sexual PCR



## DNA adducts for Sexual PCR

1. Random primers are used to amplify templates pretreated with DNA adducts.
2. Adducts cause premature termination of extension by blocking the polymerase.
3. Random size fragments are created by random priming and premature termination, not by digestion.
4. DNA fragments are ready for Sexual PCR.

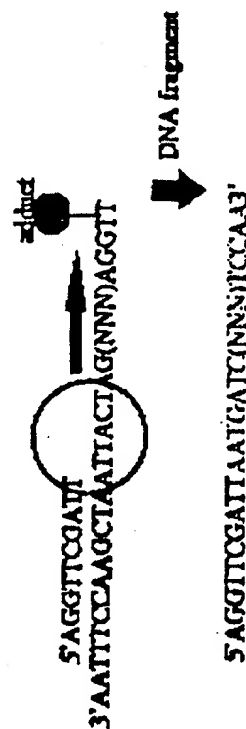
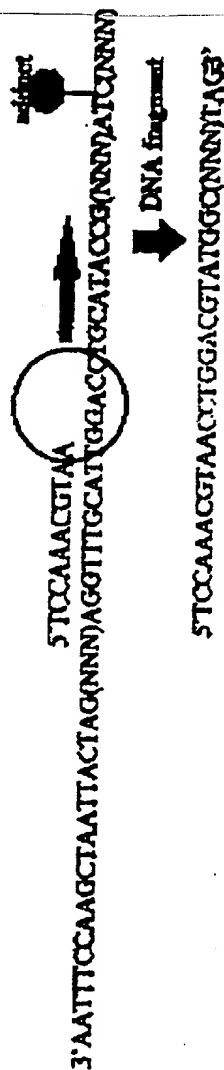


FIG. 4

**DNA Adducts**And UV  
light

Aristolochic acid 1  
 Aristolochic acid 2  
 2-Amino-3-methylimidazo(4,5-f)quinoline  
 2-Amino-1-methyl-6-phenylimidazo(4,5-b)pyridine  
 2-bromosaccharin (ZBA)  
 7-bromomethylbenzo(a)anthracene  
 benzo(a)pyrene  
 benzo(a)pyrene diepoxide  
 Mitomycin C  
 camptothecin  
 (+)-CC-1065 (from *Streptomyces zelensis*)  
 N-hydroxy-4'-fluoro-4-acetylaminobiphenyl  
 trivalent chromium  
 aromatic amines  
 platinum(II)  
 UV

F16.5

## Creating DNA adducts using U.V. light

1. Irradiate pool of template DNA with U.V. light.



5' AGATTAAAGGAGTCGTAAGGATT3'  
 5' AGATTAAAGGAGTCGTAAGGATT3'  
 5' AGATTAAAGGAGTCGTAAGGATT3'

2. Cross links in the DNA will be introduced by the U.V. These crosslinks will stop Taq Polymerase extension.

5' AGATTAAAGGAGTCGTAAGGATT3'

5' AGATTAAAGGAGTCGTAAGGATT3'

5' AGATTAAAGGAGTCGTAAGGATT3'

3. Use random primers on cross linked DNA and extend with Taq Polymerase.

5' AGATTAAAGGAGTCGTAAGGATT3'  
 3' AGGCACT

5' AGATTAAAGGAGTCGTAAGGATT3'  
 3' CCTAAS

5' AGATTAAAGGAGTCGTAAGGATT3'  
 3' CTCAGS

4. Taq extensions are blocked by U.V. adducts. This creates random size fragments ready for gene shuffling.

3'CTAATTCCTCAGCATS  
 3'AGGCATTCCTAAS  
 3'AATTCCTCAGS

FIG. 6

# Reassembly of DNA fragments

Edd Lane

